

to the public. An important objective is to minimize regulatory restrictions and administrative burdens on the introduction of these new facilities. The Commission should adopt only the minimum rules necessary to preserve the ancillary nature of the terrestrial facilities to be operated in conjunction with MSS systems and to protect existing services from harmful interference.

Although the Commission identified and discussed the issues to be addressed in the service rules governing ancillary terrestrial operations in the MSS bands, the Commission did not include an appendix to its Notice specifying proposed text for the rules it intends to adopt in this proceeding.<sup>46</sup> In addressing these issues, Constellation drafted proposals for the text of rule revisions that are presented in the Appendix to these Comments. These rule proposals include conforming amendments to several existing rule sections, as well as text for a new §25.146 specifying the new service rules governing ancillary terrestrial operations as part of L-Band, 1.6/2.4 GHz and 2 GHz MSS systems. Constellation believes that these proposed rules fulfill all of the Commission's objectives and addresses the concerns raised by the Commission.

**A. Only A Footnote To The Table Of Allocations For MSS Is Required To Implement Ancillary Terrestrial Operations**

The Commission raises several issues related to amending the U.S. Table of Allocations contained in §2.106 of the Commission's rules to authorize the ancillary terrestrial component of MSS systems.<sup>47</sup> Constellation believes that the most effective means of addressing these issues is by means of a new non-government footnote to the table applied to the MSS allocation in each

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<sup>46</sup> See generally, *Id.* at paras. 30 – 76. Some partial rule texts are described by the Commission in para. 77.

<sup>47</sup> See *Id.* at paras. 35 and 69 – 71.

of the bands involved. Specific text for such a footnote is proposed in the Appendix to these comments.

This proposed footnote provides a simple, consistent approach to amending the Table of Allocations to accommodate ancillary terrestrial operations in each of the three pairs of MSS pairs, and the footnote ties the terrestrial mobile allocations specifically to the MSS allocations. Such a footnote is the most flexible means of adding these capabilities to MSS systems. It also limits the scope of the allocation change to the intended purpose of enhancing the MSS allocation. Moreover, a footnote approach is likely to be the most effective method in obtaining international recognition of such ancillary operations if proposed by the United States, to a future World Radiocommunications Conference to obtain international recognition of such operations.

Constellation believes that alternative approaches, involving more general changes to the status of the fixed or mobile service allocations in the Table of Allocations are beyond the scope of this proceeding.<sup>48</sup> All of the bands used by MSS systems at L-Band, 1.6/2.4 GHz and 2 GHz have complex allocation and licensing arrangements, often involving multiple national and international footnotes dealing with fixed and mobile services. These are complex interrelationships between the various allocated services in each of these MSS bands, which is different in each MSS band. The addition of fixed or mobile services to MSS bands, or changes in status of existing allocations to these services in MSS bands, are likely to raise peripheral issues and complicate this proceeding.<sup>49</sup> Inevitably, such broad allocation changes are likely to

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<sup>48</sup> For example, Constellation does not believe it appropriate to modify the secondary status of fixed and mobile services in footnotes NG156 and NG168 in the 2 GHz MSS bands to accommodate ancillary terrestrial operations by MSS operators. *See Id.* at para. 69.

<sup>49</sup> The 2 GHz MSS band, in particular, is subject to complex relocation and reimbursement procedures that are likely to be made much more complex and difficult if the status of the fixed and mobile allocations were to be changed at this time.

have unintended consequences.<sup>50</sup> Constellation believes that the new footnote it is proposing is the most prudent approach to allow MSS operators to enhance the services offered by their systems without upsetting the current regulatory status of the other services in the bands involved.

**B. Any Service Definitions Should Be Carefully Crafted**

Constellation agrees with the Commission's proposal that ancillary terrestrial operations should be included in the definition of the relevant MSS services in §25.201 of the Commission's rules.<sup>51</sup> Constellation also agrees with the Commission that the term "ancillary" in this proceeding is used in the sense of an integrated satellite/terrestrial service offering, not in the sense of additional services that are of a fundamentally different nature than those offered over satellite links.<sup>52</sup> However, any text to be incorporated into the Commission's rules to implement this interpretation needs to be very carefully crafted to avoid confusion or inadvertently imposing unnecessary restrictions on the design, operation, and services of ancillary terrestrial facilities.

Some of the terminology used in the Notice may be subject to varying interpretations.<sup>53</sup> For example, the phrase "integrated with the satellite network" raises questions regarding the specification of which protocol or network layers are being integrated. In addition, the phrase "augmenting signals in areas where the principal service signal, the satellite signal, is attenuated," confuses the intent of ancillary terrestrial facilities to augment or extend the service

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<sup>50</sup> See e.g. *Id.* at para. 69 with respect to 2 GHz and paras. 35, 70-71 with respect to L-band.

<sup>51</sup> See *Id.* at para. 77.

<sup>52</sup> See *Id.* at para. 30.

<sup>53</sup> See *Id.* at para. 30.

of the MSS system to users in areas where no usable satellite signals are generally available.<sup>54</sup> For these reasons, Constellation has proposed text in a new subsection §25.146(c) to specify the authorized scope of ancillary terrestrial operations in a less ambiguous fashion that is less likely to be misinterpreted.<sup>55</sup>

**C. Ancillary Terrestrial Authorizations Should Be Conditioned Only On Achieving Fifty State Coverage**

The Commission identifies a number of issues regarding the conditions for making ancillary terrestrial authorizations effective that involve the extent of satellite system deployment.<sup>56</sup> These issues appear to be based on the Commission's desire to insure that terrestrial operations remain ancillary in the MSS bands. However, in seeking to prevent any abuse of an authorization for ancillary terrestrial operations, it is important that the Commission's regulatory approach not increase the financial risks facing MSS licensees by creating regulatory uncertainties over the ability of an MSS operator to maintain its terrestrial services in the event of the satellite failures.

For the reasons set forth below, Constellation believes that this objective can be best achieved by a simple regulatory framework consisting of three elements. The first element is an initial threshold requirement for fifty state coverage by MSS systems using non-geostationary satellite orbit ("GSO") satellites before the regular license authority to operate ancillary terrestrial operations becomes effective. The second element consists of an ongoing reporting

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<sup>54</sup> In particular, the phrase "augmenting signals" should not be interpreted as requiring that a satellite signal also be transmitted to a user receiving service through an ancillary terrestrial facility.

<sup>55</sup> Constellation does not believe it necessary to include a third limitation identified in paragraph 30 of the Notice that ancillary facilities "use assigned MSS frequencies" in this rule subsection since such limits on authorized frequency use is specified in other sections of the proposed rules.

<sup>56</sup> See Notice. at paras. 32, 42 – 45 and 77.

requirement so that the Commission can monitor the status of the MSS satellite network coverage. The third element is the revocation of ancillary terrestrial authority when the satellite constellation falls below the requirements for maintaining the satellite system license. Constellation believes that this approach provides an effective means of satisfying the Commission's objectives without imposing unnecessary administrative burdens on MSS operators or arbitrary operational requirements.

Constellation agrees that implementation of an in-orbit MSS satellite system should be the threshold requirement for the effectiveness of the operating license to conduct ancillary terrestrial operations. The simplest and unambiguous means of enforcing this requirement is to require certification by the satellite licensee that a sufficient number of satellites have been launched to cover the entire United States with at least one satellite with an elevation of at least 5 degrees all of the time. This coverage concept is unambiguous and easy to verify with commercially available software.

Constellation believes that the license for ancillary terrestrial operations should become effective once the MSS system has met the fifty state "coverage" requirement even if some of its authorized satellites are not operational. Requiring the "entire" constellation to be operational is unnecessarily restrictive since an MSS system may include in-orbit spare satellites, and failures of spare satellites should not determine the status of the ancillary terrestrial operations authorization. Even with launch or in-orbit failures, MSS systems may still provide the required fifty state coverage, even if less than the full constellation is operational.

Constellation is also concerned that some of the other concepts mentioned in the Notice are ambiguous and difficult to enforce. For example, compared to the unambiguous concept of

“coverage,” other terms such as “service availability” and “provides ... service” are subject to various interpretations by different parties, and are difficult to define and measure.<sup>57</sup> Additional requirements beyond the unambiguous initial requirement for fifty state coverage for maintaining authority for ancillary terrestrial operations would be unduly burdensome and may inadvertently result in the denial of reliable, high quality service to the customers of an integrated satellite/terrestrial system. Moreover, it would be unfair to penalize an MSS operator during such periods by suspending ancillary terrestrial operations and the revenue that could be generated by such operations, and it would be unfair to penalize customers by denying them the service that would otherwise be available to them. Once an MSS provider has launched its system, it has every incentive to maintain service availability by moving in-orbit spares or by the launch of additional replacement satellites to maintain service availability at the highest practical level. However, the amount of time to replace satellites that fail in orbit requires a complex balancing of many factors, and any arbitrary standard on the level of system coverage required to maintain the ancillary terrestrial authorization is likely to distort normal commercial judgments. Consequently, there is no need for additional conditions beyond initial fifty state coverage, even if there were sunset provisions of the requirements to maintain system coverage beyond those already in the rules for maintaining the MSS satellite system license.<sup>58</sup>

In the hypothetical event that a satellite operator allows its satellite constellation coverage to degrade, and the Commission believes that the MSS licensee is not engaged in a good faith effort to maintain the satellite coverage required by its authorization, the Commission can initiate a show cause proceeding to revoke the license for both the satellite system, as well as for

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<sup>57</sup> See e.g. *Id.* at paras. 44 – 45 and subparagraph 5 of para. 77.

<sup>58</sup> See *Id.* at para. 32.

ancillary terrestrial operations.<sup>59</sup> To support this enforcement capability, licensees should be required to keep the Commission informed of its system status and any plans for replacement satellites. The current reporting requirements are sufficient to satisfy any requirements for monitoring system build out and operational status. MSS operators have every commercial incentive to maintain high service availability and will launch replacement satellites as soon as practical to maintain a high system availability. If it is shown that an MSS system has degraded and the operator has made no plans to restore the system to its full coverage capabilities, the Commission can revoke the authorization for ancillary terrestrial operations.

Constellation believes that the authorization for ancillary terrestrial operations should run in parallel with the MSS satellite system license once the threshold coverage requirement is met.<sup>60</sup> Constellation believes that the MSS operator should be allowed to build out and test terrestrial repeaters before fifty state coverage is achieved.<sup>61</sup> Significant delays in availability of a fully integrated system would delay customer ramp-up and have adverse financial impact on MSS operators. Constructing terrestrial facilities is a time consuming undertaking that requires substantial long lead time planning, site acquisition, design and manufacturing, installation and testing, etc. Early demonstration of integrated systems are essential for rapid roll-out, once fifty state coverage requirement has been fulfilled. Therefore, construction of ancillary terrestrial facilities should be permitted at the licensee's risk prior to the commencement of operation, and Constellation proposes a new subsection §25.113(h) to this effect. In addition, special temporary

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<sup>59</sup> See Commission proposal at *Id.* at paras. 45 and 48.

<sup>60</sup> The criteria should be the fifty state coverage requirement, not the launch of the full proposed system, since the full constellation may include in-orbit spare satellites and multiple coverage satellites not required to provide fifty state coverage. See *Id.* at paras. 44–45.

<sup>61</sup> See *Id.* at para. 45.

authorizations should be routinely available for testing and demonstration purposes prior to full fifty state coverage.

**D. The Commission Should Minimize Administrative Burdens On Ancillary Terrestrial Operations**

Constellation agrees with the Commission that ancillary terrestrial operations should be authorized as modifications to L-Band, 1.6/2.4 GHz and 2 GHz MSS satellite system licenses (or Declaratory Orders in the case of non-U.S. MSS systems), and has proposed text for a new subsection §25.146(b) in the Appendix to these comments.<sup>62</sup> In the case of non-U.S. MSS systems, Constellation believes that some form of radio station license must be issued to govern the operation of the ancillary terrestrial radio transmitters located on U.S. territory. This radio station authorization can be granted in the form of a modification of a feeder link earth station license or a blanket license for user transceivers issued to the MSS system operator.

Requests for authority to provide for ancillary terrestrial operations should be handled as applications for license modification. Although the Commission may place them on public notice to offer the opportunity for comment, such applications should not be treated as major modifications within the meaning of §25.116 that would require a new application processing round.

Constellation does not believe that MSS terrestrial base stations should be individually licensed.<sup>63</sup> No separate administrative procedures or licensing should be required for individual base stations since such individual licensing would place a heavy, unnecessary administrative

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<sup>62</sup> See *Id.* at paras. 50 – 51.

<sup>63</sup> See *Id.* at paras. 34 and 52. In these comments, Constellation refers to terrestrial “base” station and to “user transceiver” to denote subscriber terminal regardless of where located and whether satellite or terrestrial link.



burden on the Commission and MSS operators. The current coordination procedures in MSS bands are the most efficient procedures necessary in order to optimize spectrum use and are sufficient to protect existing operations. Any necessary information can be exchanged between affected operators through the coordination process. The Commission can also resolve any disputes if necessary, as they arise.

Constellation is also proposing text specifying that technical information be included in applications requesting authority for ancillary terrestrial operations in new subsection §25.114(c)(22) in the Appendix to these comments.<sup>64</sup> Constellation does not believe it is necessary for the Commission to specify any additional requirements to ensure that the terrestrial component is ancillary to the satellite component.<sup>65</sup> It is sufficient for the Commission to review the proposed facilities description in the application to verify that terrestrial operations are ancillary to satellite operations. Specifying *a priori* technical requirements at this time will only involve the Commission in too much detail and intrusion into the system and network design functions.

**E. The Current MSS Frequency Assignment And Coordination Arrangements Can Be Applied To Ancillary Terrestrial Operations**

Constellation believes that the current arrangements for frequency selection and coordination used in the MSS bands can easily be extended to include ancillary terrestrial

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<sup>64</sup> See *Id.* at paras. 77 – 78 regarding “complete frequency plan” and showing of no harmful interference.

<sup>65</sup> See *Id.* at para. 45. Satellite and terrestrial transmission schemes may be tailored to optimize radio link, but the media access control protocol should be designed route traffic over the optimum media if both are available to the user. Requiring a “central data switch” is inefficient and may undercut the ability to establish a robust, distributed network and entail intrusive Commission involvement in network design and operation. The situation becomes complicated since integrated networks are likely to have different paths for signaling and traffic, and for voice and packet-switched data.

operations.<sup>66</sup> These frequency selection and coordination procedures are well defined for the 1.6/2.4 GHz MSS service<sup>67</sup> and the 2 GHz MSS service<sup>68</sup> and a similar procedure should be developed for the L-band MSS service.<sup>69</sup>

In general, Constellation believes that the specific technical parameters of ancillary terrestrial facilities and interference criteria should be left to the MSS operators to determine. These parameters should be based on the specific designs of their systems and the particular arrangements in each of the three sets of bands.<sup>70</sup> Such criteria would include both co-channel and adjacent in-band interference considerations with the MSS bands.<sup>71</sup>

The inter-system coordination mechanism already specified for the satellite component is the appropriate mechanism in which to address the terrestrial component. The Commission should rely on existing coordination procedures rather than prematurely imposing new technical standards based on PCS before the parameters optimized for MSS ancillary terrestrial facilities are defined. The most significant technical issue would be adjacent channel interference between high power terrestrial transmitters and satellite reception – however this situation could occur whether terrestrial operations were limited to the “selected assignment” or in other portions of the MSS band.

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<sup>66</sup> See *Id.* at para. 46 – 49.

<sup>67</sup> See Amendment of the Commission’s Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands, 9 FCC Rcd 4936 (1994) (the “Big Leo Order”).

<sup>68</sup> See Establishment of the Policies and Rules for the Mobile Satellite Service in the 2 GHz Band, IB Docket No. 99-81, Report and Order, 15 FCC Rcd 16127 (2000). (2 GHz MSS Order).

<sup>69</sup> See *Notice* at para. 49.

<sup>70</sup> Constellation believes that the current procedures for terrestrial station relocation and reimbursement to accommodate MSS at 2 GHz can be readily adapted to ancillary terrestrials operations. See *Id.* at paras. 36 and 74 – 76.

<sup>71</sup> Consideration of out-of-band emission limits to protect radio facilities in adjacent bands outside of the MSS allocations are addressed in subsection F(ii) below.

All components of MSS systems involved with ancillary terrestrial operations should be designed with frequency agility so that they can operate anywhere within the allocated bands in order to make optimum use of the available spectrum. This is already a requirement for 2 GHz MSS systems and is normal practice for 1.6/2.4 GHz MSS systems. Such frequency agility will provide the flexibility needed to maintain the current frequency selection, assignment and coordination procedures in MSS bands, once ancillary terrestrial facilities are placed into service.

Consequently, there should be no impact on system architecture by permitting terrestrial operations outside of the “selected assignment,” or encumber the operations of another MSS operator. By definition, an MSS operator’s secondary terrestrial use of frequencies outside of its “selected assignment” should not be permitted to limit another MSS operator’s choice of its “selected assignment”. This can be ensured by requiring frequency agility of terrestrial transmitters to conform to inter-system coordination agreements, e.g. to move high power terrestrial transmissions far enough away in frequency from another operator’s choice of satellite downlink frequencies.

With respect to defining the frequencies for terrestrial use in the 2 GHz MSS band, Constellation believes that the Commission should allow terrestrial use of any portion of the MSS operator’s “selected assignment.” Moreover, the Commission should not impose any restrictions on the use of other segments of the 2 GHz MSS band not yet selected by another MSS operator, subject to coordination on the same basis as current procedures for the satellite component. Constellation believes that the 2 GHz MSS spectrum should be re-assigned among the remaining 2 GHz MSS licensees after revocation of a 2 GHz MSS license for failure to meet due diligence milestones, and that this re-assignment should include the rights for ancillary

terrestrial operations.<sup>72</sup> In addition, MSS licensees should be allowed to aggregate spectrum for both satellite and/or ancillary terrestrial operations under the existing 2 GHz MSS frequency selection and coordination procedures.

Constellation does not believe it is necessary at this time to specify any particular frequency usage pattern for ancillary terrestrial operations in the 2 GHz MSS bands, such as the four ICO proposed modes.<sup>73</sup> Each of these arrangements appears to be consistent with the Commission's proposals and it is premature to specify any particular arrangement as a general rule at this time. The Commission should allow the MSS operators to coordinate their ancillary terrestrial operations among themselves, and intervene only if the parties are not able to reach agreement among themselves.

**F. Only Minimal Technical Rule Changes Are Needed To Protect Other Services From Interference And Provide Flexibility For Ancillary Terrestrial Service Design And Operation**

Constellation agrees with the Commission that it should provide flexibility in any technical standards that it applies to ancillary terrestrial facilities in MSS bands.<sup>74</sup> Constellation believes that the Commission should adopt only the minimum necessary technical standards to prevent harmful interference to other licensees that could be caused by the addition of ancillary terrestrial operations to currently licensed MSS systems at L-Band, 1.6/2.4 GHz and 2 GHz. However, different considerations apply to the standards that might be applied to the user

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<sup>72</sup> See *Id.* at para. 48. See also Comments in response to other 2 GHz MSS FNPRM filed on October 22, 2001.

<sup>73</sup> See *Id.* at paras. 48, 59 – 66, n. 82.

<sup>74</sup> See *Id.* at para. 54.

transceivers used by MSS subscribers and those that might be applied to the terrestrial fixed base stations that are equivalent to PCS base stations.<sup>75</sup>

(i) **Existing MSS Technical Standards Should Be Applied To Subscriber Transceivers Operating With Terrestrial Base Stations**

With respect to the user handsets, Constellation believes that no substantive changes should be made to the technical standards in the Commission's rules to accommodate ancillary terrestrial operations. Constellation believes that handsets should be subject to existing standards for satellite terminals regardless of whether they are used for satellite or terrestrial component transmissions.<sup>76</sup> The Commission has already conducted extension technical examinations of potential interference in its rule making proceedings to establish the 1.6/2.4 GHz and 2 GHz MSS, and has imposed stringent limits on out-of-band emissions on user terminals to protect GPS.<sup>77</sup> MSS handsets will employ common radio frequency electronics when operating in the MSS bands with both satellites and base stations. There should not be two different technical standards for the same piece of equipment based on whether the transmission is to a satellite or a terrestrial base station at the same moment. Since the operation of these handsets with terrestrial repeaters will be at lower power than with satellites, they can operate within the same limits on out-of-band emission and frequency stability and provide the same level of protection as required by transceivers operating with satellites. In particular, there is no need to impose an additional set of technical standards derived from conditions in the PCS bands when the current technical

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<sup>75</sup> See Notice at para. 52 and n. 87 which defines this "base station" terminology. Also the term "user transceiver" is used in these comments for terminals used by the customers of MSS systems, whether communicating with a satellite or with a base station.

<sup>76</sup> See *Id.* at paras. 55, 57 and 68.

<sup>77</sup> MSS transceiver units will be subject to stringent technical requirements as a result of the Commission's rule making to implement standards for Global Mobile Personal Communications by Satellite ("GMPCS"). See GMPCS rulemaking RM proceeding. In addition, the ITU-R has established recommendations on essential characteristics on MSS user terminals. See ITU-R Recommendation M.1343.

standards on MSS transceivers already address all potential interference cases in the MSS bands.<sup>78</sup> Consequently, the only rule revisions are those necessary to clarify that the existing technical standards on MSS user transceivers apply to handsets whether transmitting to satellites or to terrestrial base stations.<sup>79</sup>

Constellation believes that the current Commission rules governing equipment certification procedures<sup>80</sup> and safety and distress communications<sup>81</sup> should be applied to user transceivers when operating with terrestrial base stations, and has proposed minor amendments to the relevant rule sections to clarify this requirement with respect to user transceivers in the 1.6/2.4 GHz and 2 GHz MSS.<sup>82</sup>

**(ii) Only Minimal New Technical Standards Are Required For Base Station Transmissions**

With respect to technical standards for terrestrial base stations,<sup>83</sup> Constellation does not believe that rule standards are required for protection of other facilities operating within the MSS bands. Terrestrial base stations designed for operation with MSS systems will be designed to optimize the performance of these facilities as part of an integrated satellite/terrestrial network. For example, higher antenna towers with greater cell size may be more economical, especially during the early ramp-up of MSS systems, compared to facilities operating in densely populated

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<sup>78</sup> However, in the case where MSS downlink bands are used for ancillary terrestrial TDD handset transmissions, the requirements of the corresponding MSS uplink band should be applied to these operations.

<sup>79</sup> See the proposed changes to §25.136 in the Appendix to these comments.

<sup>80</sup> See *Id.* at para. 53.

<sup>81</sup> See *Id.* at para. 58.

<sup>82</sup> Additional minor amendments are also required with respect to L-band MSS to apply GMDSS, AMS(R)S and GPS protection requirements.

<sup>83</sup> See *Id.* at para. 34.

bands in well developed urban markets.<sup>84</sup> PCS technical standards that may be important to define interference levels at boundaries of market areas defining licenses being auctioned, are not required for ancillary terrestrial facilities in MSS licenses that are inherently nationwide in scope. Consequently, there is no need to impose PCS technical standards on the terrestrial base stations operated by MSS licensees, with respect to protecting in-band operations of other MSS licensees since this matter can be treated more flexibly in the established coordination procedures in these MSS bands.

Some limits on transmit powers, antenna heights and out-of-band emissions may be needed with respect to the protection of facilities operated in the adjacent bands outside of the MSS allocations. In these cases, however, any technical standards should be the same as those applied in the adjacent allocations, to provide the same level of protection from ancillary MSS base stations to adjacent band operations, as is afforded to the MSS ancillary facilities from the facilities in adjacent bands. While the PCS technical standards may therefore be appropriate for 2 GHz facilities, it is not clear that the same situation is true for ancillary terrestrial base stations operating in the L-Band and 1.6/2.4 GHz MSS bands.

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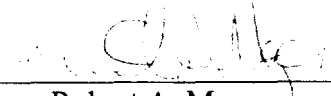
<sup>84</sup> One of the original concept of cellular communications is the concept of cell splitting as demand grows. In the case of ancillary terrestrial operations with MSS systems, it may be desirable to initially construct larger cells using taller towers in urban areas during initial ramp-up when the subscriber level is low, and then reduce cell size as subscriber levels rise and smaller cells with lower tower heights would be more economic.

## Conclusion

Constellation believes that the public interest would be well served by the improvements resulting from the authorization of MSS operators to conduct ancillary terrestrial operations, and urges the Commission to adopt the specific rules Constellation proposes in the Appendix to these Comments.

Respectfully submitted,

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# **APPENDIX**

**Proposed Rule Revisions**

1. Amend §2.106 of the rules by adding a new, non-government footnote NGxxx to the mobile-satellite service allocation in each of the bands 1525-1559 MHz, 1610-1626.5 MHz, 1626.5-1660.5 MHz, 1990-2025 MHz, 2165-2200 MHz and 2483.5-2500 MHz to read as follows:

NGxxx        The bands 1525-1559 MHz, 1610-1626.5 MHz, 1626.5-1660.5 MHz, 1990-2025 MHz, 2165-2200 MHz and 2483.5-2500 MHz are also allocated to the mobile service on a primary basis for ancillary terrestrial operations in conjunction with the operations of satellite systems in the mobile-satellite service in the same band(s).

2. Add or amend the following definitions in §25.201:

\* \* \*

L-Band Mobile-Satellite Service. A mobile-satellite service (together with any authorized ancillary terrestrial service) that operates in the 1525-1559 MHz and 1626.5-1660.5 MHz frequency bands, or in any portion thereof.

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1.6/2.4 GHz Mobile-Satellite Service. A mobile-satellite service (together with any authorized ancillary terrestrial service) that operates in the 1610-1626.5 MHz and 2483.5-2500 MHz frequency bands, or in any portion thereof.

2 GHz Mobile-Satellite Service. A mobile-satellite service (together with any authorized ancillary terrestrial service) that operates in the 1990-2025 MHz and 2165-2200 MHz frequency bands, or in any portion thereof.

3. Add a new subsection (h) to § 25.113 “Construction permits, station licenses, launch authority” To read as follows:

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(h)        Construction permits are not required for ancillary terrestrial facilities to be operated in conjunction with satellite systems in the L-Band, 1.6/2.4 GHz and 2 GHz mobile-satellite services. Construction of such stations may commence, at the applicant’s own risk, prior to grant of a license.

4. Add a new §25.114(c)(22) to read as follows:

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(c)(22) Applications proposing ancillary terrestrial operations in the L-Band, 1.6/2.4 GHz or 2 GHz Mobile-Satellite Services shall include a description of the types of services to be provided, including a description of the transmission

characteristics and performance objectives for each type of proposed service, detailed radio frequency plan (including frequencies, emission designators and transmit power levels), details of the link noise budget, and typical or baseline transmission and modulation parameters.

5. Amend §25.136 “Operating Provisions For Earth Station Networks In The 1.6/2.4 GHz Mobile-Satellite Service And 2 GHz Mobile-Satellite Service” to read as follows:

§25.136      Operating Provisions For User Transceivers ~~Earth—Station Networks~~ In The 1.6/2.4 GHz Mobile-Satellite Service And 2 GHz Mobile-Satellite Service.

In addition to the technical requirements specified in Sec. 25.213, user transceivers (whether operating directly with a satellite or with a terrestrial facility associated with the satellite system) ~~earth—stations~~ operating in the 1.6/2.4 GHz Mobile-Satellite Service or 2 GHz Mobile-Satellite Service are subject to the following operating conditions:

(a)      User transceiver units associated with the 1.6/2.4 GHz Mobile-Satellite Service or 2 GHz Mobile-Satellite Service may not be operated on civil aircraft unless the earth station has a direct physical connection to the aircraft Cabin Communication system.

(b)      No person shall transmit to a space station or ancillary terrestrial facility associated with the satellite system unless the user transceiver is first authorized by the space station operator or by a service vendor authorized by that operator, and the specific transmission is conducted in accordance with the operating protocol specified by the system operator.

(c)      Any user transceiver unit associated with this service will be deemed, when communicating with a particular 1.6/2.4 GHz Mobile-Satellite Service or 2 GHz Mobile-Satellite Service system (including any ancillary terrestrial facilities) pursuant to paragraph (b) of this section, to be temporarily associated with and licensed to the system operator or service vendor holding the blanket earth station license awarded pursuant to Section 25.115(d). The domestic earth station licensee shall, for this temporary period, assume the same licensee responsibility for the user transceiver as if the user transceiver were regularly licensed to it.

(d)      Operation of user transceivers with ancillary terrestrial facilities shall also conform to the requirements of §25.146.

5. Amend subsection ¶25.143(f)(1) to read as follows:

(f)      Safety and distress communications.

(1)      Stations operating in the 1.6/2.4 GHz Mobile-Satellite Service and 2 GHz Mobile-Satellite Service (including ancillary terrestrial facilities associated with

the satellite service) that are voluntarily installed on a U.S. ship or are used to comply with any statute or regulatory equipment carriage requirements may also be subject to the requirements of sections 321(b) and 359 of the Communications Act of 1934. Licensees are advised that these provisions give priority to radio communications or signals relating to ships in distress and prohibits a charge for the transmission of maritime distress calls and related traffic.

5. Add a new §25.146 entitled “Ancillary Terrestrial Operations In Mobile-Satellite Service Bands Between 1 and 3 GHz” to read as follows:

§25.146        Ancillary Terrestrial Operations In Mobile-Satellite Service Bands Between 1 and 3 GHz

(a)        Operators of satellite systems in the L-Band Mobile-Satellite Service, the 1.6/2.4 GHz Mobile-Satellite Service, and the 2 GHz Mobile-Satellite Service may be authorized to conduct ancillary terrestrial operations in accordance with the provisions of this section.

(b)        The Commission shall grant authority for such operations upon the filing of an application for modification of a mobile-satellite service system license granted to a United States entity, or, in the case of a non-U.S. system authorized by Declaratory Ruling pursuant to the procedures of §25.136, upon the filing of an application for an earth station license or modification thereof requesting authority to conduct ancillary terrestrial operations.

(c)        Ancillary terrestrial operations are authorized for the purpose of extending the services provided by mobile-satellite service systems into geographic areas within the service area of the satellite system where the signals to or from the satellite are subject to attenuation by natural or manmade objects.

(d)        Authority to conduct ancillary terrestrial operations does not become effective until the mobile-satellite service system licensee certifies that a sufficient number of satellites have been launched so that at least one satellite is visible above the horizon at an elevation angle of at least five degrees at all times throughout the 50 states, Puerto Rico and the U.S. Virgin Islands, or, for geostationary satellite systems authorized to serve a smaller area, within the specified geographic coverage area.

(e)        Ancillary terrestrial operations are subject to coordination of among the other licensees in the L-Band Mobile-Satellite Service, the 1.6/2.4 GHz Mobile-Satellite Service, or the 2 GHz Mobile-Satellite Service, as applicable. Operation of ancillary terrestrial facilities outside of the assigned or selected band segment for the mobile-satellite system shall not cause harmful interference to other mobile-satellite systems, including their associated terrestrial facilities, operating on that system’s assigned or selected band segment.

(f)        Additional conditions may be attached by the Commission to authorizations for ancillary terrestrial operations on a case-by-case basis in order

to preserve the ancillary nature of such operations and to prevent harmful interference to other licensed stations.

6. Add a new subsection (d)(3) to §25.121 “License Term and Renewals” to read as follows:

\* \* \*

(d)(3) The license term for ancillary terrestrial stations operated in conjunction with a satellite system in the L-Band Mobile-Satellite Service, the 1.6/2.4 GHz Mobile-Satellite Service, or the 2 GHz Mobile-Satellite Service shall run concurrently with the license for the satellite system.

## **CERTIFICATE OF SERVICE**

I, Patricia A. Gibson, hereby certify that a copy of the foregoing **Comments of Constellation Communications Holdings, Inc.**, was mailed this 22nd day of October, 2001, via the United States Postal Service, first class, postage pre-paid, to each of the following:

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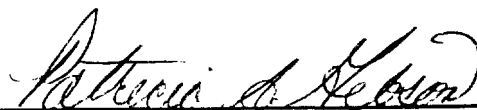
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Patricia A. Gibson